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Studies on Ethiopian Apionidae (Coleoptera). 2. *Afrotibicina stygia* gen. and sp. nov. and biological notes on the tribe Tanaonini

by

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A new South African representative of the tribe Tanaonini (Apionidae) is described: *Afrotibicina stygia* gen. and sp. nov. and an addition to Kissinger's key (1968) is provided. Some new data about biology of Tanaonini show that the tribe could be feeding on the archaic family Proteaceae.

Among the specimens of South African Apionidae sent by Mr R. Oberprieler, Plant Protection Research Institute, Pretoria, RSA, whose kindness I wish to thank here, two representatives of a new species belonging to a new genus in the tribe Tanaonini were found. In the following descriptions I use the terminology for tegmen explained in a previous paper of the series dealing with the Ethiopian Apionidae (Alonso-Zarazaga 1983), terminology for other parts of the male and female genitalia follows Lindroth (1957).

Afrotibicina gen. nov.

DESCRIPTION. Body glabrous, microreticulate. Beak straight, narrowing from base to apex, longer in female than in male. Scrobe sulciform, directed to ventral surface of head. Antenna inserted 0,36–0,42 × length of beak from base, scape longer in male than in female, antennal club compact, oval.

Pronotum densely punctate, not tuberculate. Basal fovea sulciform, obsolete, reaching 0,45 × length of pronotum from base. Front coxae inserted closer to front margin of prosternum than to hind margin. Rim of procoxae with minute toothlike projection, almost inconspicuous.

Elytra parallel, striae catenulate, intervals concave, transversely wrinkled. 10th stria present in basal third and apical fourth of elytra, at apex striae join 1 + 10, 2 + 9, 4 + 5, 3 + 6, 7 + 8, the last three pairs somewhat variable. Specialized setae present on 7th interval.

Profemur stouter than the others, apparently unarmed, at high magnifications with minute, irregular, sparse toothlike asperities. Trochanter short, about one seventh length of femur. Spines of apical comb of tibiae fine and uniform. Onychium projecting beyond lobes of 3rd tarsomere. Claws free, obtusely dentate.

Mesocoxae separate. 3rd and 4th sternites together 0,9 × as long as 5th. Male pygidium as in *Apiomorphus*.

Male and female genitalia: see description of species.

ETYMOLOGY. *afer* (L.) = African, + *tibicina* (L.) = Woman flute player, inspired by the straight beak and the grace of this weevil. Its gender is feminine.

TYPE SPECIES. *Afrotibicina stygia*. sp. nov.

REMARKS. In Kissinger's (1968) key to the genera of Apioninae of the World, this new genus keys out at couplet 24, where it fits neither *Apiomorphus* Wagner, 1911 nor *Mecolenus* Schoenherr, 1847.

Therefore, I propose to substitute the following two couplets for couplet 24.

24. Scrobe foveiform. Pronotum tuberculate. Elytra pubescent and sometimes setose. Profemur dentate or unarmed. 10th stria reduced to the subhumeral region. Internal sac of penis with one variously shaped large sclerite ..... **Apiomorphus** Wagner, 1911
— Scrobe sulciform, directed ventrally. Pronotum punctate. Elytra glabrous except for specialized setae. Profemur crenulate, or microasperate and apparently unarmed. 24a

24a Beak longer in female than in male, straight. Antenna inserted in the basal half of beak. Club oval, compact. Profemur microasperate, apparently unarmed. 7th elytral interval with 2–3 specialized setae. 10th stria present in subhumeral and apical regions of elytra. Onychium projecting beyond lobes of 3rd tarsomere. Apex of tegminal plate with parallel parameroid lobes and 5 short setae, apex of lobes projecting as a membrane. Internal sac without sclerites. ..... **Afrotibicina** gen. nov.
— Beak longer in male than in female, curved. Antenna inserted in the apical half of beak. Club fusiform, loosely formed. Profemur visibly crenulate. 9th elytral interval with one specialized seta. 10th stria present in subhumeral region only. Onychium not projecting beyond lobes of 3rd tarsomere. Apex of tegminal plate with widely separated parameroid lobes and long, numerous macrochaetae, no membranous projections present at apex. Internal sac with one sclerite. ..... **Mecolenus** Schoenherr, 1847

Afrotibicina gen. nov. seems to be the most primitive of the three genera, because of the 10th stria present at apex, the straight beak, the sulciform scrobe, the lack of sclerite in the internal sac of penis, the punctate pronotum and so on. In the same way, it shows remarkable autapomorphous features such as the glabrous body, the membranous apices of the parameroid lobes and the concave intervals of the elytra. On the other hand, the tegmen of *Afrotibicina* shows a strong similarity to that of *Apotapion gibbipennis* (Fairmaire, 1881), an inhabitant of Viti Levu (Fiji Islands).

Data on *Mecolenus* have been taken from Wagner (1912) and Kissinger (1968), since the genus is still unknown to me.

Afrotibicina stygia sp. nov. Figs 1–11.

DESCRIPTION. Length: 3,97 mm (male), 4,18 mm (female), r.e. Width: 1,27–1,28 mm.

Integument dull black, dark brown in teneral portions, microreticulate except apex of beak; vestiture almost absent, glabrous at high magnifications, except on antennae, some small stiff setae on femora, tibiae and 5th sternite, and some very minute specialized setae on 7th interval.

Male beak (Figs 1, 3) 1,12 × as long as pronotum, 5 × as long as wide as apex, microreticulate and punctate, excepting the apical tenth, which is smooth and shiny; in dorsal view sides of prorostrum converging to apex, slightly concave, sides of metarostrum converging to insertion, nearly straight; in lateral view straight, evenly converging to apex. Mesorostrum 1,1 × as wide as apex.

Female beak (Figs 2, 4) similar to that of male, but longer, 1,27 × as long as pronotum, 6,25 × as long as wide at apex.

Scrobe sulciform, oblique, lateral ridges low, not reaching fore margin of eyes. Antenna inserted 0,42 (male) or 0,36 (female) × length of beak from base, at distance in front of eye 2,33 (male) or 2,53 (female) × as great as width of frons; scape slightly curved, slightly thickened in apical third, 3,6 (male) or 4,0 (female) × as long as wide, 0,9 × (male) or 0,81 (female) as long as mesorostrum width. Pedicel 0,55–0,60 × as long as scape, 2 × as long as wide, the rest of funicle segments becoming shorter, the last one obconical, transverse. Club 1,35–1,50 × as long as scape, about 2,1 × as long as wide.

Eye nearly round, slightly convex, its diameter about 1,3 × as long as frons width. Frons 0,9 × as wide as apex of beak, with coarse punctures and five obsolete longitudinal keels. Head conical, as long as wide or slightly longer, vertex constricted in lateral view, less deeply punctate.

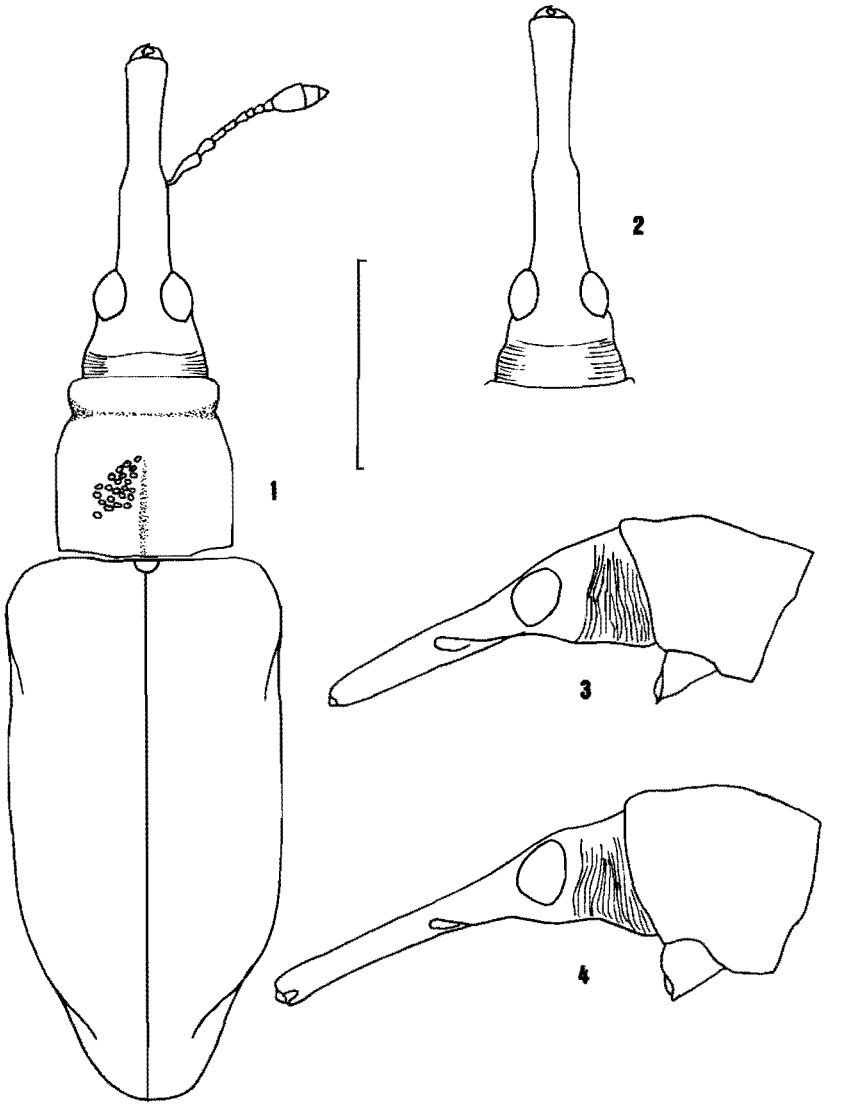
Pronotum (Fig. 1) 1,05–1,17 × as long as wide at base, the punctures about 0,04 mm in diameter, irregularly arranged and separated; sides in basal half parallel, in apical half converging to apex, a little behind this strongly constricted laterally (very much the same as a *Piezotrachelus*); apex about 0,8 × as wide as base, which has no basal flange. Scutellum transverse, semicircular, slightly depressed medially.

Elytra (Fig. 1) at humeri 1,51 × as wide as base of pronotum, 2,63–2,85 × as long as pronotum, 2,00–2,05 × as long as wide; humeral calluses developed. Intervals slightly concave, 1,6 × as wide as striae, transversely wrinkled, not punctate, only 2–3 minute punctures each bearing a hyaline minute seta on 7th interval. Striae catenulate, punctures deep, slightly longer that the separating bars. At base 1st stria shortened before reaching apex of scutellum, 2nd and 3rd and sometimes 4th projected outwardly as fine sulci, forming a flange against the base, 6th and 7th shortened against humeral callus, 10th beginning at the level of apex of metepimeron.

Sternites and metasternum with moderately sparse, superficial punctures. Fore margin of 1st sternite and metasternum with a strong rim. Mesocoxae separated about 0,2 × coxal diameter. Mesosternal apophysis narrow, almost parallel-sided, more projecting than metasternum, as in *Apiomorphus*. 5th sternite transverse, with an apical rim and sparse erect hyaline setae on distal half. Suture I conspicuous, more impressed laterally.

Profemur elongate, 3,78–3,89 × as long as wide, ventral surface scabrose, with minute spinelike asperities, but no definite denticulation. Tibia with outer edge straight, inner edge slightly bisinuate and setose, simple; longitudinal grooves obsolete, edge weakly keeled. Protibia long, narrow, 7,5 × as long as wide at apex, apically curved backwards. Tarsi moderately robust, 3rd tarsomere deeply bilobed to about basal fifth, 1st protarsomere about 1,6 × (male) or about 1,9 (female) as long as wide, 2nd protarsomere isodiametrical, deeply sinuate apically, triangular. Claws dentate, apex of tooth bearing a small straight seta not reaching apex of claw.

Male characters: all tibiae shortly mucronate, mucrones black, almost incon-



Figs 1–4. *Afrotibicina stygia* gen. and sp. nov., schematic. 1. ♂ holotype, dorsal view, showing detail of pronotal punctures. 2. ♀ paratype, head and beak, dorsal view. 3. ♂ holotype, head, beak and prothorax, lateral view. 4. ♂ paratype, id. Scale = 1 mm.

spicuous, protibial ones about 0,2 × as long as width of protibial apex. Male pygidium as in *Apiomorphus*.

Aedeagus: Tegmen (Fig. 5) with parameroid lobes 2 × as long as wide, not much separated, each with sclerotized plate bearing 5 short setae, plate continued apically into triangular membranous lobe, fenestrae not defined, dorsal portion of ring slightly sclerotized, mainly laterally; arched line present; plate-base protruding forward as trapezoidal lobe with membranous, truncate apex. Penis (Figs 6, 7) depressed, in lateral view evenly converging to apex, dorsal plate of a peculiar shape, not lanceolate; internal sac without sclerites.

Spiculum gastrale (Fig. 8) with very long manubrium, the posterior arms asymmetrical, widened at apex and with one outer irregular plate each.

Female genitalia: Spermatheca (Fig. 10) of the common apionid type (slightly damaged). Coxite short, 2,6 × as long as wide, styli almost cylindrical, 1,8 × as long as wide, each bearing six oblique setae at apex (Fig. 11). Spiculum ventrale (Fig. 9) with apical irregular plate bearing macrochaetae and sensilla.

MATERIAL EXAMINED. Holotype, ED. ♂: SOUTH AFRICA: Stellenbosch mt. (southern slope), 9.xi.1972, L. C. Starke; National Collection of Insects, Pretoria, South Africa. Genitalia mounted in Canada balsam. Specimen slightly teneral and damaged, lacking two left protarsomeres and right protarsus; pinned on small cork block. Paratype: 1 ♀, same data and preparation, genitalia mounted on microscopic slide, in my collection.

ETYMOLOGY. *stygia* (L.) = ill-fated, baneful, referring to its black integument.

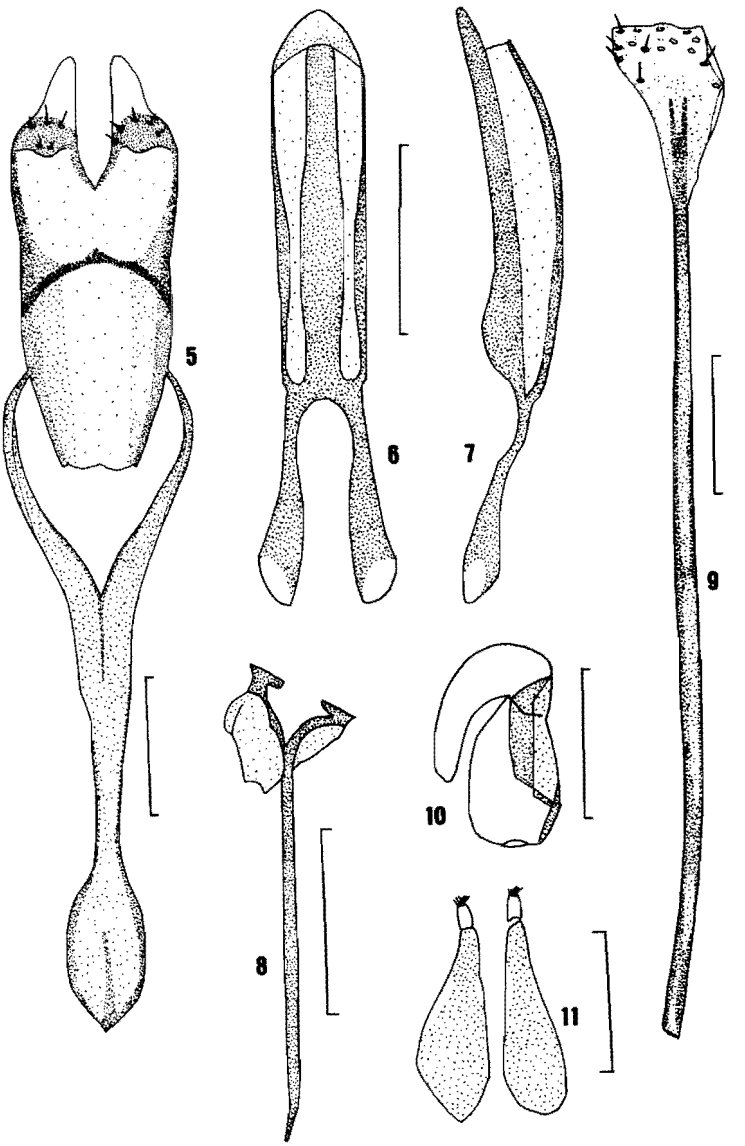
BIOLOGICAL NOTES ON TANAONINI. The types of *Afrotibicina stygia* sp. nov. show the accession number AcFR 1720, which states that the specimens were reared from galls on shoots of *Protea nitida* Mill. (=*P. arborea* Houtt.) (R. Oberprieler personal communication).

This is the same plant on which *Apiomorphus oberprieleri* Alonso Zarazaga (1983) was found feeding on the leaves and making holes in the epidermis (accession number AcFR 1469).

The specimens of the two known species of genus *Setapion* Balfour-Browne, 1944 (*S. provinciale* Balfour-Browne, 1944 and *S. quantillum* Balfour-Browne, 1944) which I have studied, carry labels with the accession numbers AcSN 172 and AcSN 172b. Both of them give the species as collected on leaves of *Brabeium stellatifolium* L., another Proteaceae.

This biological feature seems to validate the inclusion of *Setapion* in Tanaonini, from which it differs only in the lack of the 10th stria and the toothlike projection on the procoxae. Both of these characters are likely to have been lost more than once in Apioninae. The structure of the tegmina shows clear affinities to that of *Apiomorphus* and *Mecolenus* and is unlike that of Apionini. The specimens studied, although fitting Balfour-Browne's descriptions exactly, show differences in size: *S. quantillum* ranged 1,29–1,49 mm (r.e.) and *S. provinciale* 1,79–1,96 mm; (measurements made with a calibrated eyepiece micrometer).

We can assume for the moment that the main source of food in the Tanaonini, which are from my point of view the most primitive tribe in Apioninae, are the Proteaceae, also an archaic Gondwanan family restricted to the African, South American and Australasian tropics.



Figs 5–11. *Afrotibicina stygia* gen. and sp. nov. 5. ♂ holotype, tegmen, dorsal view. 6. Id., penis, dorsal view. 7. Id., penis, lateral view. B. Id., spiculum gastrale. 9. ♀ paratype, spiculum ventrale. 10. Id., spermatheca, 11. Id., ovipositor. Scales: 5, 9 = 0,125 mm; 6–8, 11 = 0,25 mm; 10 = 0,1 mm.

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